1. Purpose

This specification is applicable to 17AMG series motor protector that manufactured by Jiangsu Yitong Control System Co., Ltd.

2. Structures:

2-1 Appearance: The dimensions meet the requirements of the drawings of Jiangsu Yitong Control System Co., Ltd., see the attached drawings for details.

2-2 Shell and bottom board: The material is the imported free-iron plating material.

2-3 Conducting wire: it meets UL, and the length and model can be customized according to the customer's requirements

2-4 Insulation pad: NOMEX-T410 B-EFP11

3. Performances

3-1 Electrical parameters: AC120V,16A AC230V,8A DC16V,20A

3-2 Action reset temperature, see note 1 and 2.

3-3 Insulation voltage: There is able to withstand AC1500V for 1 minute between the conducting wire and the insulation casing or AC1800V for 1 seconds without breakdown phenomenon, Insulating gasket can withstand 600V for 1 minutes or 660V for 1 second no breakdown, the leakage current should be less than 0.25mA.

3-4 Insulation resistance: Under the normal conditions, the insulation resistance between the conducting wire and the insulation casing shall be higher than 100MΩ (the used meter is DC500V)

3-5 Contact resistance: The contact resistance is below 50 mΩ.

3-6 Thermal shock test: The product can be alternately placed in the environment of 150℃ and -20℃ for 30 minutes each, 5 cycles in total

3-7 Vibration test: The product can withstand the sinusoidal wave vibration at the amplitude of 1.5 MM and the frequency of 10-55Hz, the swept frequency conversion time is 3 to 5 minutes and the vibration directions are X, Y and Z, vibrating 2 hours continuously at each direction.

3-8 Drop test: The product falls free from the height of 70CM to the floor (PVC floor) once.

After the test specified in Item 3-6, 3-7, 3-8, the following conditions shall be met:

A) The changes of action temperature are within +/- 7℃ of the initial value;
B) The contact resistance shall be below 50 MΩ;
C) There is no obvious deformation in the appearance;
D) There is no cracking or deformation in the conducting wire.

4. Service life: Under the circumstances of the rated voltage, current and power factor are 1, and the external thermal source acting for 1000 times, the product shall meet the following conditions:

A) The changes of action temperature are within +/- 5℃ of the initial value;
B) The contact resistance shall be below 50 MΩ;
C) The contact does not weld or drops off.

And can still act till being tested for 5000 times.

5. The other matters:

5-1 The heating rate during the action temperature test shall be controlled at 1℃ per 2 minutes.

5-2 Product certification:

UL&CUL NO: E312268

CQC NO: CQC07002021510，CQC09002030767

VDE NO: 40022710

TUV NO: AN 50286151 0001

5-3 Product echo test

The product meets the EU RoHS and REACH requirements.

5-4 Product model and specifications:

17AM	G	*	043	A	5
I	II	III	IV	V	VI

I – Designates Model Name
II – Customer Code 1
Blank or A~Z: According to client's assignment, which are identical in construction
III – Customer Code 2
Blank or A~Z: According to client's assignment, which are identical in construction
IV – Designates Operating temperature or Operating temperature code (see following table for details)

Rating Temperature	Operating Temperature Code	
50	017	117
55	018	118
60	019	119
65	020	200
70	021	201
75	022	202
80	023	203
85	024	204
90	025	205
95	026	206
100	027	207
105	028	208
110	029	209
115	030	210
120	031	211
125	032	212
130	033	213
135	034	214
140	035	215
145	036	216
150	037	217
155	038	218
160	039	219
165	040	220
170	041	221
175	042	222
180	043	223

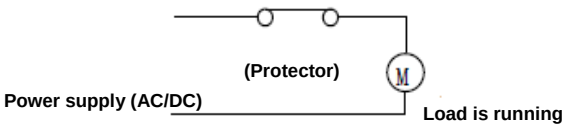
V – Terminal designation
A: The two terminals are at the same side of the control
B: The two terminals are at the different side of the control
VI – Designates operating temperature tolerance
Blank or tolerance of operating deviation temperature

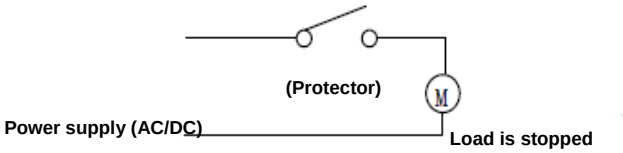
The working principles and design of the product:

1. The product features the functions of sensing the temperature and over-current protection;

1.1 Principles of over-current protection:

The current passes through the terminal of shell, bimetallic strip, contact or auxiliary heat coil (connecting with the static contact on the bottom board), and then is connected with the electrical appliances (such as motor and transformer, etc.) through the terminal on the bottom board to form a loop. When there is over large current in the electrical appliances or the stall current exceeds the tripping value set for the protector, the protector will cut off the power within the setting time to protect the appliances;





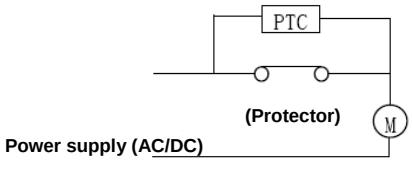
1.2 Principles of temperature protection:

The current passes through the terminal of shell, bimetallic strip and contact (connecting with the static contact on the bottom board). When the electrical appliances do not work normally and make the surrounding temperature over-high, the heat will be transferred to the bimetallic strip, and if it is up to the calibrated tripping temperature, the bimetallic strip will act to separate the dynamic and static contacts of the protector, so as to disconnect the circuit to protect the appliances.

2. Design of the power interruption and the delayed protection:

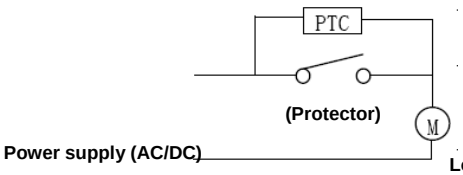
Add the PTC heating element on the protector

2.1 Operation



* The thermal protector and PTC element constitute a parallel circuit, and connect to the load (electrical appliances) in series, and when the load works normally, PTC will not generate high temperature:

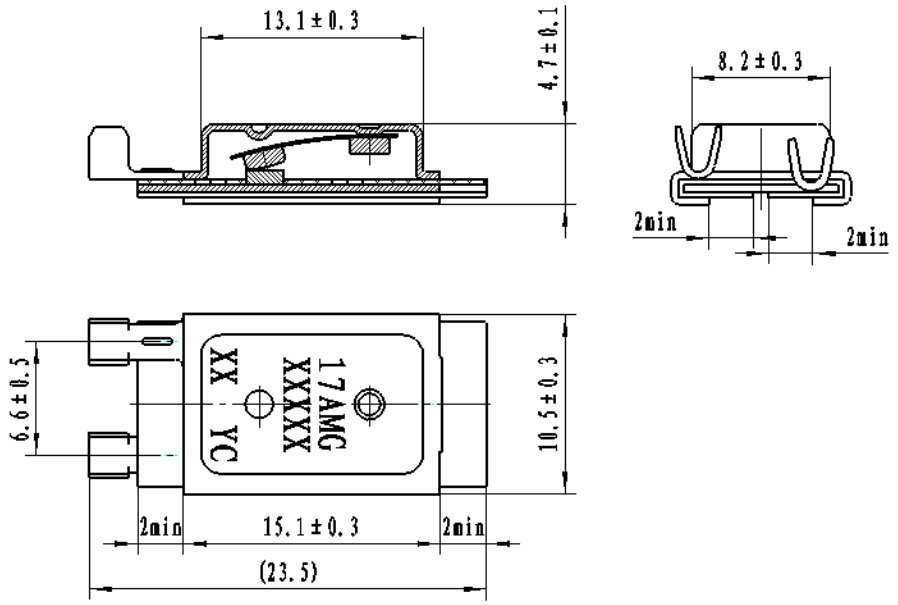
2.2 Delayed protection



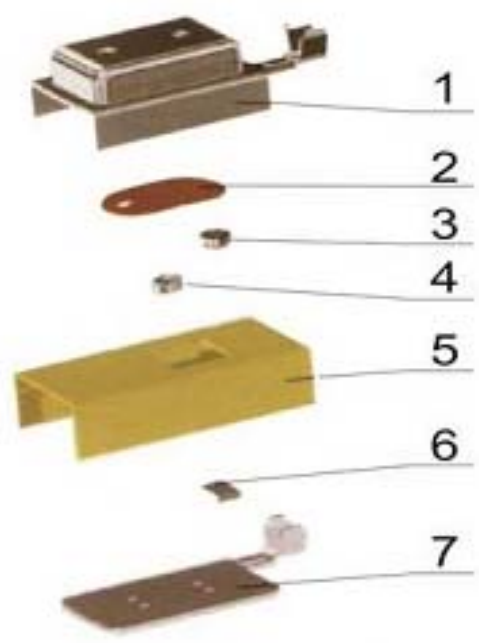
* When the load generates the high temperature or heavy current during the abnormal condition, it will disconnect the thermal protector, and PTC element will generate high temperature and high resistance (PTC's high temperature will keep the thermal protector in disconnecting), the load will stop working;

* When the power is manually disconnected, the temperature of the protector and PTC begins to drop. After a period of temperature dropping, the thermal protector automatically resets, and when reconnecting the power, the load will work.

Overall dimensions(mm)



No.	Part name
1	Shell
2	Bimetallic element
3	Dynamic contact
4	Nails
5	Insulating paper
6	Static contact
7	Baseplate
8	Casing
9	Wireway



普通型热保护器结构